

Power-Peaking Factors

This Limit is referred to by Technical Specification LCO 3.2.5

Heat Flux Hot Channel Factor FQ

FQ shall be limited by the following relationships:

$$FQ \leq LHR^{allow} (Bu) / [LHR^{avg} * P] \quad (\text{for } P \leq 1.0)$$

$LHR^{allow}(Bu)$ = See the following Table

LHR^{avg} = 5.79 kW/ft for Mk-B9 fuel

LHR^{avg} = 5.74 kW/ft for Mk-B4Z fuel

LHR^{avg} = 5.79 kW/ft for Mk-B10ZL fuel

P = ratio of THERMAL POWER/ RATED THERMAL POWER

Bu = Fuel Burnup (MWd/mtU)

Mk-B9/Mk-B10ZL LHR^{allow} kW/ft*

Core Elevation, ft	0 MWd/mtU	10650 MWd/mtU	43333 MWd/mtU	44000 MWd/mtU	44667 MWd/mtU	57000 MWd/mtU
2	15.5	16.0	16.0	16.0	16.0	12.6
4	17.5	16.5	16.5	16.5	16.3	12.6
6	17.0	16.3	16.3	16.3	16.3	12.6
8	17.0	16.5	16.5	16.5	16.3	12.6
10	17.0	16.5	16.5	16.5	16.3	12.6

Mk-B4Z LHR^{allow} kW/ft*

Core Elevation, ft	0 MWd/mtU	1000 MWd/mtU	36375 MWd/mtU	38125 MWd/mtU	40312 MWd/mtU	40750 MWd/mtU	42937 MWd/mtU	60000 MWd/mtU
2	14.5	15.5	15.5	15.5	15.5	15.5	15.5	11.6
4	16.1	16.6	16.6	16.6	16.1	16.0	15.5	11.6
6	16.1	16.1	16.1	16.1	16.1	16.0	15.5	11.6
8	17.0	17.0	17.0	16.6	16.1	16.0	15.5	11.6
10	16.0	16.0	16.0	16.0	16.0	16.0	15.5	11.6

*Linear interpolation is used to calculate the LHR limit to maintain the internal pin pressure below 2200 psia.